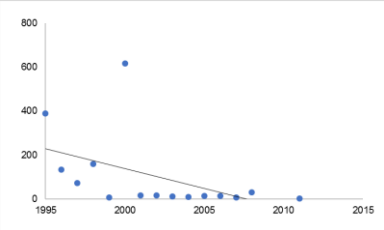
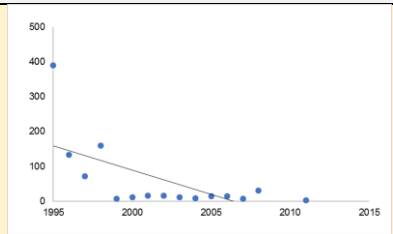
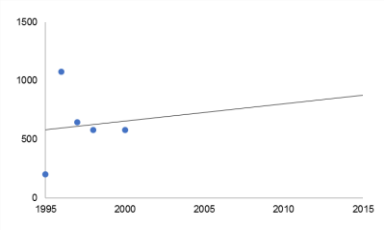
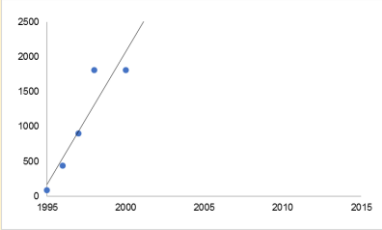
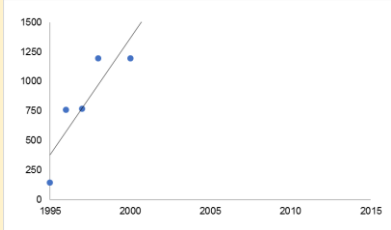
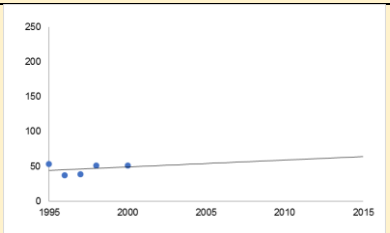
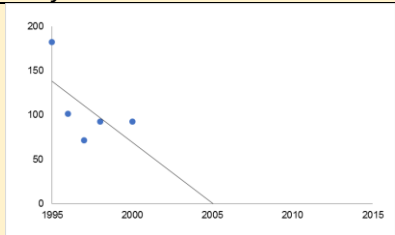
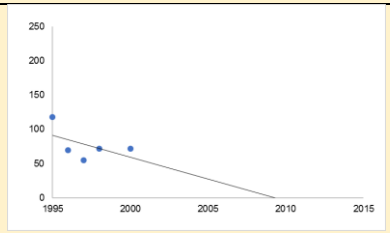
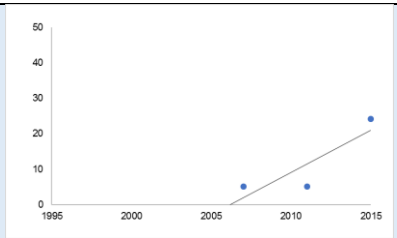
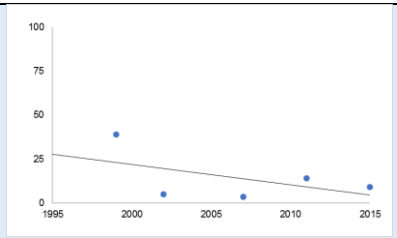
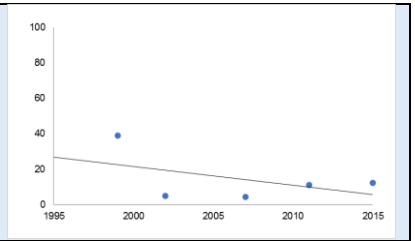
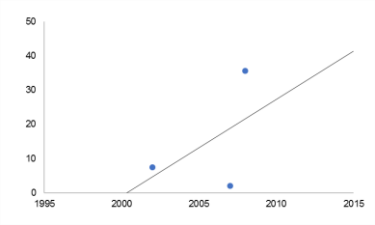
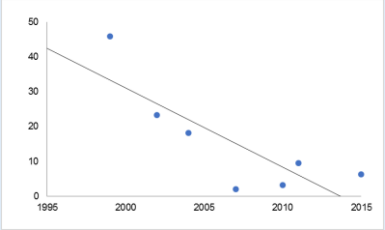
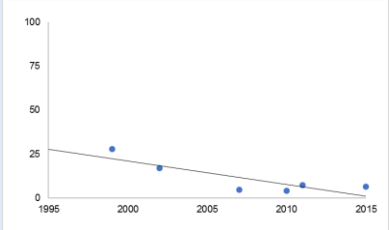
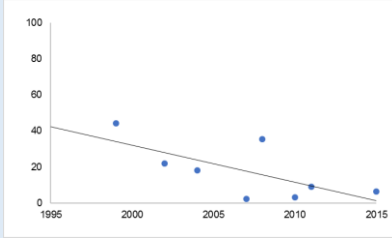
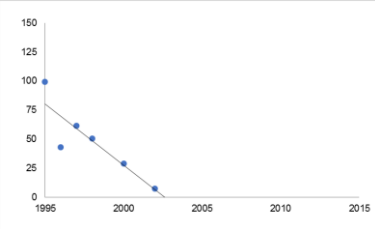
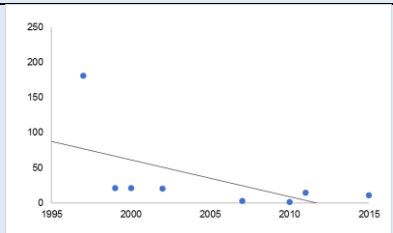
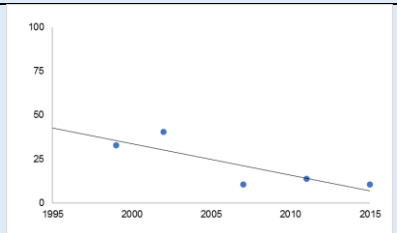
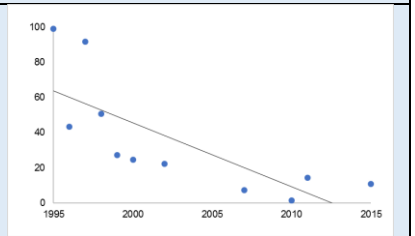
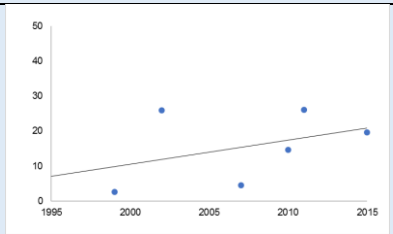
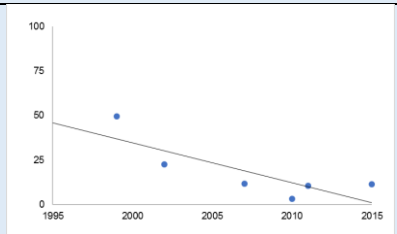
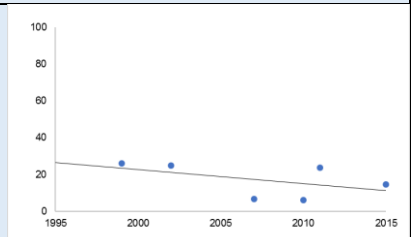
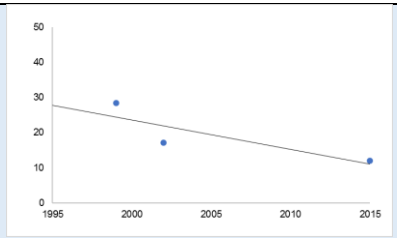
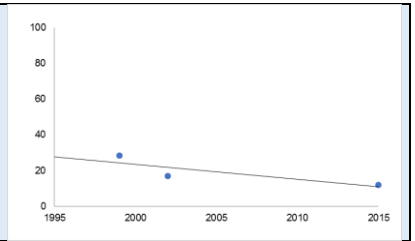
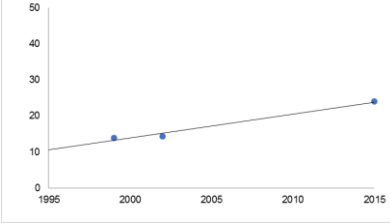
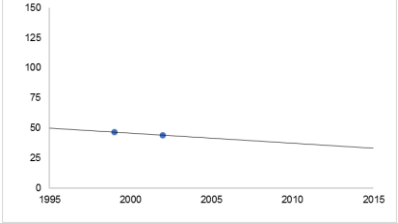
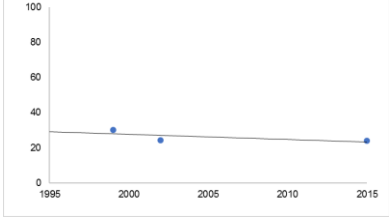
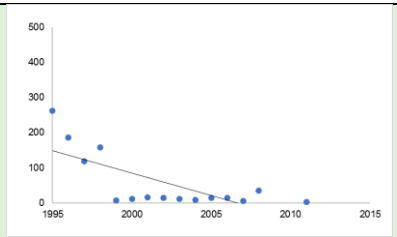
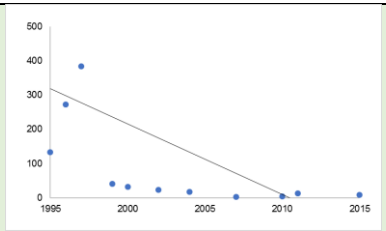
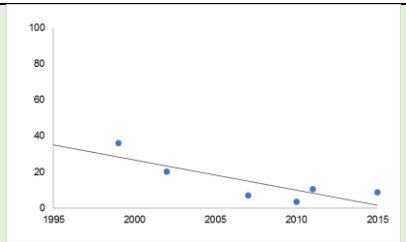
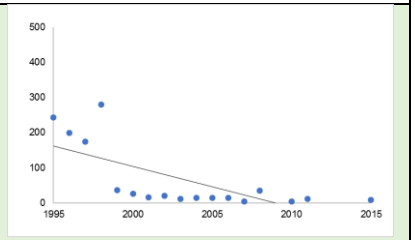
Appendix 8b: Abundance ratio

Table of mean abundance ratio across years, samples sorted by depth range and EUNIS code (1995 onwards). Abundance ratio (Eq. 1) is a measure of the level of dominance of species within a community. This measure can be used as a proxy for ecological condition.

$$Abundance\ ratio = \frac{Number\ of\ individual\ organisms\ in\ a\ sample}{Number\ of\ taxa\ in\ a\ sample} \qquad \text{(Eq. 1)}$$

EUNIS code	Depth Range			
	Intertidal	0– 10 m.	>10 m	All combined
A2.2				
A2.3		 This EUNIS code should be intertidal. One sample in each of the years.		
A2.5		 This EUNIS code should be intertidal. One sample in each of the years.		

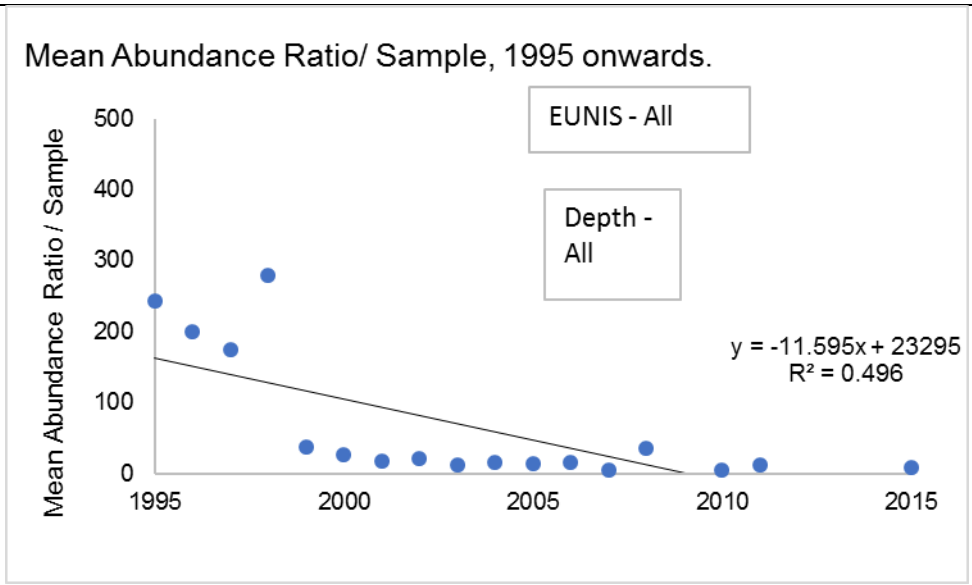
A5.1				
A5.2	 This EUNIS code should be sublittoral. One sample in 2001, 6 in 2007 and 4 in 2008.			
A5.3	 This EUNIS code should be sublittoral. Quite a few samples.			
A5.4				

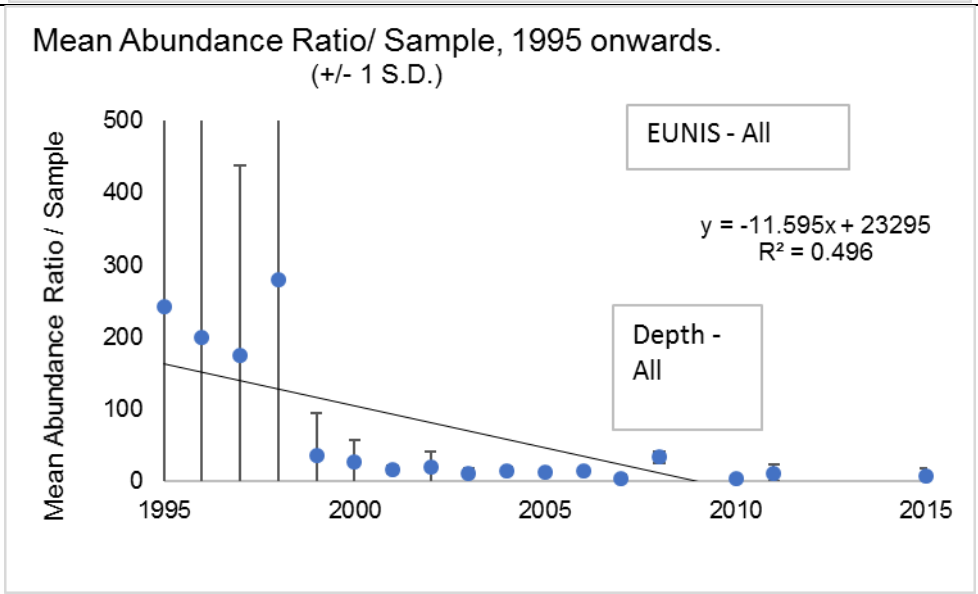
Mosaic				
Non-designated				
All combined				

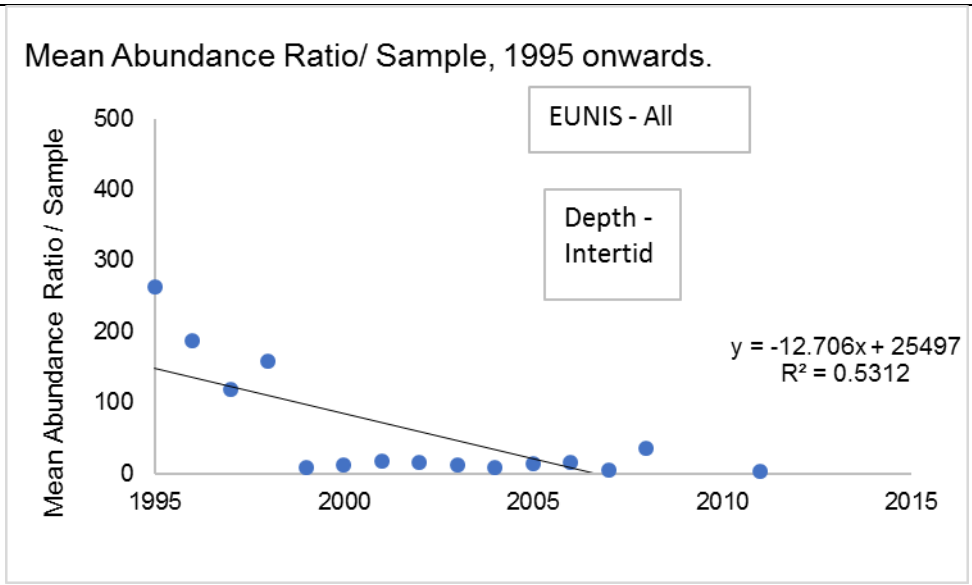
N.B. In data for the year 2000, there is an anomalously high abundance:taxa ratio. This is driven by three samples, all from the same survey, survey code OUSGMXX00B. This is recorded within the dataset as conducted on 1 January 2000, but there is a strong suspicion that this is an erroneous date, and the survey should be regarded only as a "Year 2000" survey. Within that survey, three sites (recorded as Station Numbers 1, 14 and 15, all in the River Ouse) recorded levels of 257150, 64250 and 95400 individuals / 0.1 m^2 of the small oligochaete worm *Limnodrilus*. (This was out of a total number of individuals of all taxa combined of 273750, 74700 and 103100 respectively at these stations).

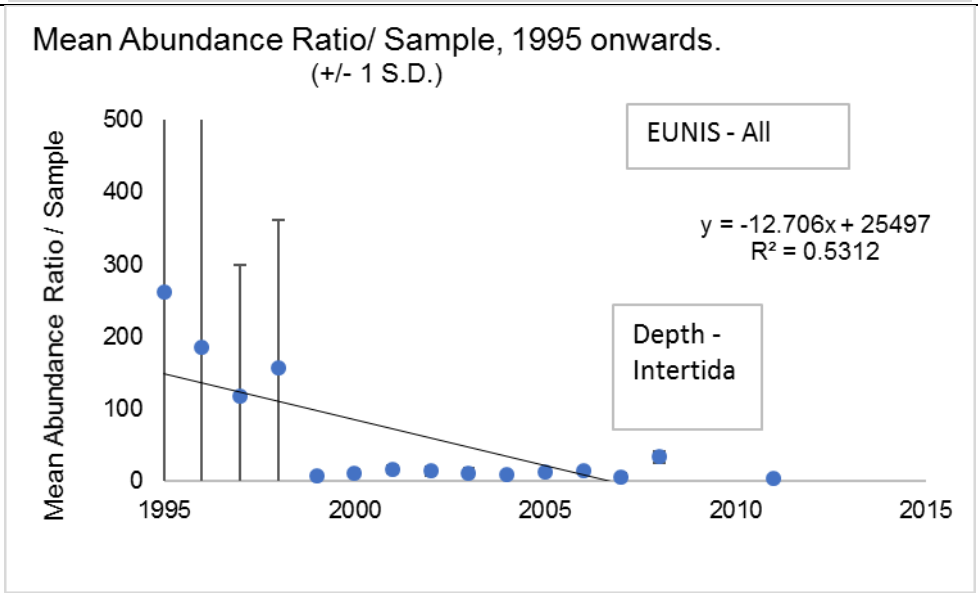
It is considered that this does not represent an accurate reflection of the overall picture for the trend in abundance / diversity for the WNNC SAC, and therefore in some of these graphs the data for year 2000 has been removed, and replaced by a value being the simple arithmetic mean of the values for years to either side of the year 2000 value (or the same value as the single year to one side, if there is only one).

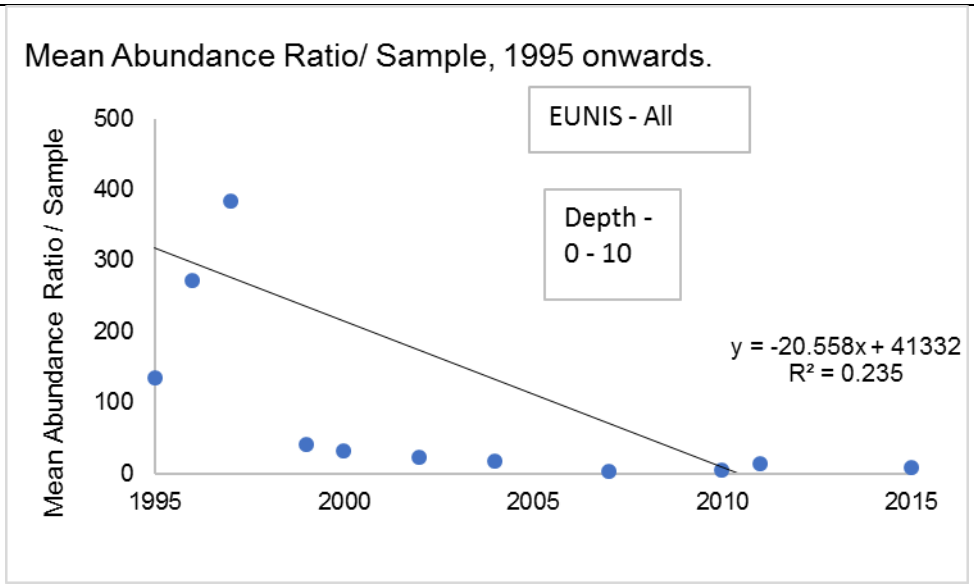
Tables of abundance ratio across years by depth range for all EUNIS codes combined:

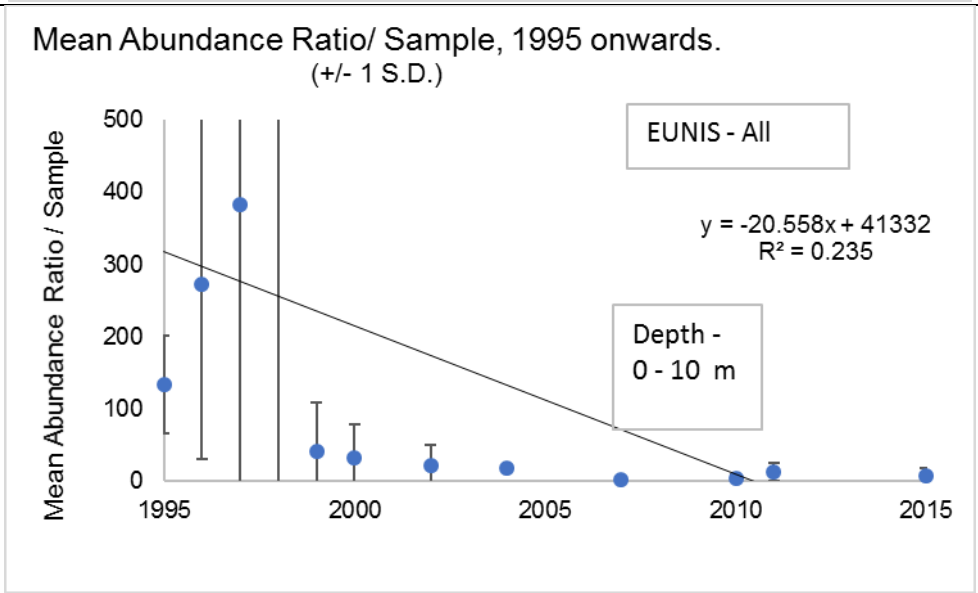


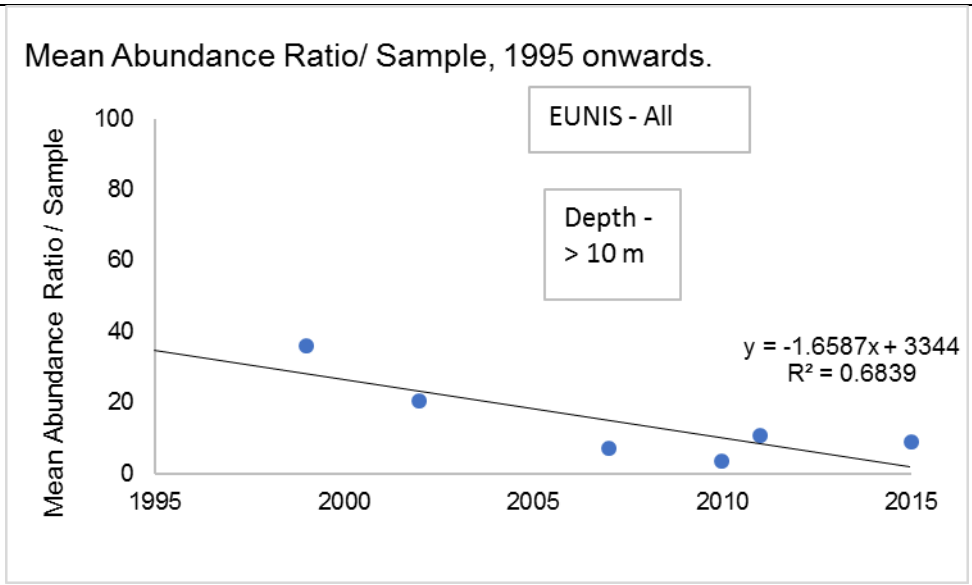


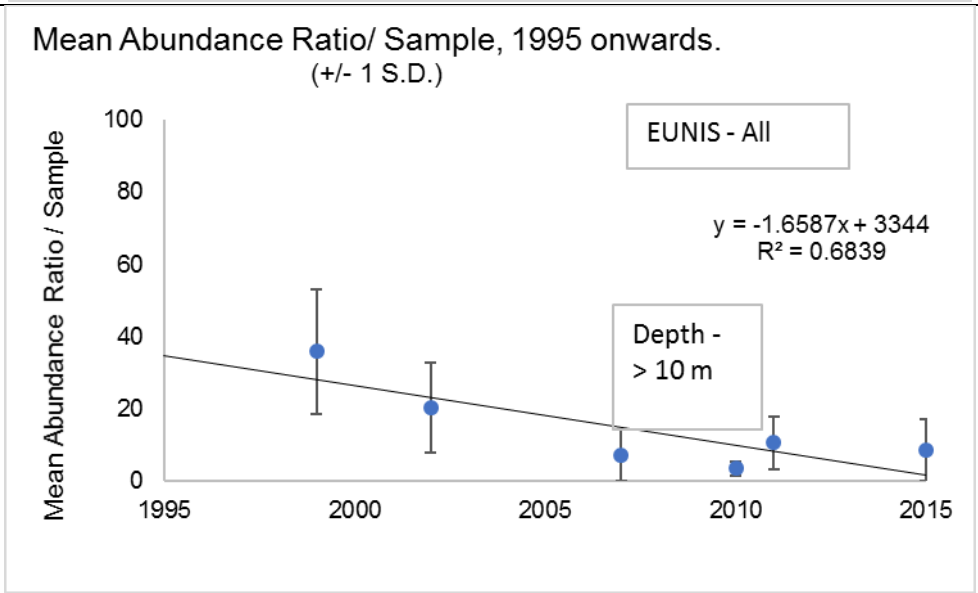

Mean Abundance Ratio/ Sample, 1995 onwards.
EUNIS - All
Depth - Intertid
y = -12.706x + 25497
R² = 0.5312
Mean Abundance Ratio / Sample
500
400
300
200
100
0
1995
2000
2005
2010
2015


Mean Abundance Ratio/ Sample, 1995 onwards.
(+/- 1 S.D.)
EUNIS - All
y = -12.706x + 25497
R² = 0.5312
Depth - Intertida
Mean Abundance Ratio / Sample
500
400
300
200
100
0
1995
2000
2005
2010
2015

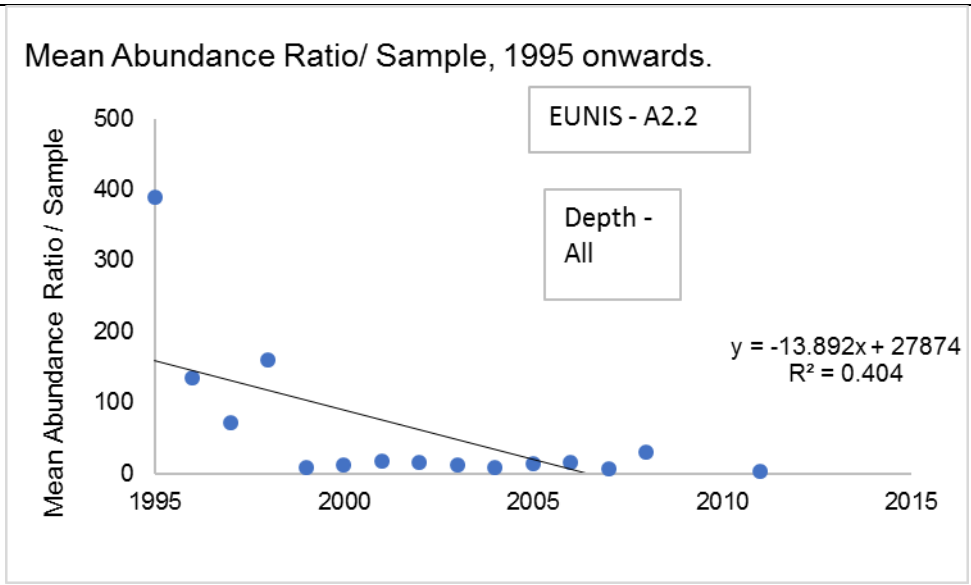

Mean Abundance Ratio/ Sample, 1995 onwards.
EUNIS - All
Depth -
0 - 10
y = -20.558x + 41332
R² = 0.235
Mean Abundance Ratio / Sample
500
400
300
200
100
0
1995
2000
2005
2010
2015

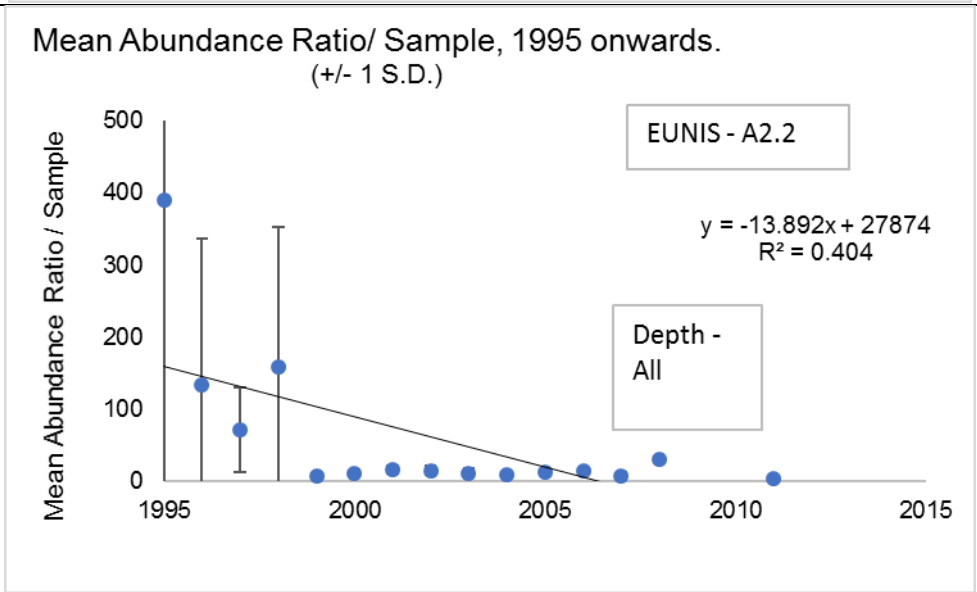

Mean Abundance Ratio/ Sample, 1995 onwards.
(+/- 1 S.D.)
EUNIS - All
y = -20.558x + 41332
R² = 0.235
Depth -
0 - 10 m
Mean Abundance Ratio / Sample
500
400
300
200
100
0
1995
2000
2005
2010
2015

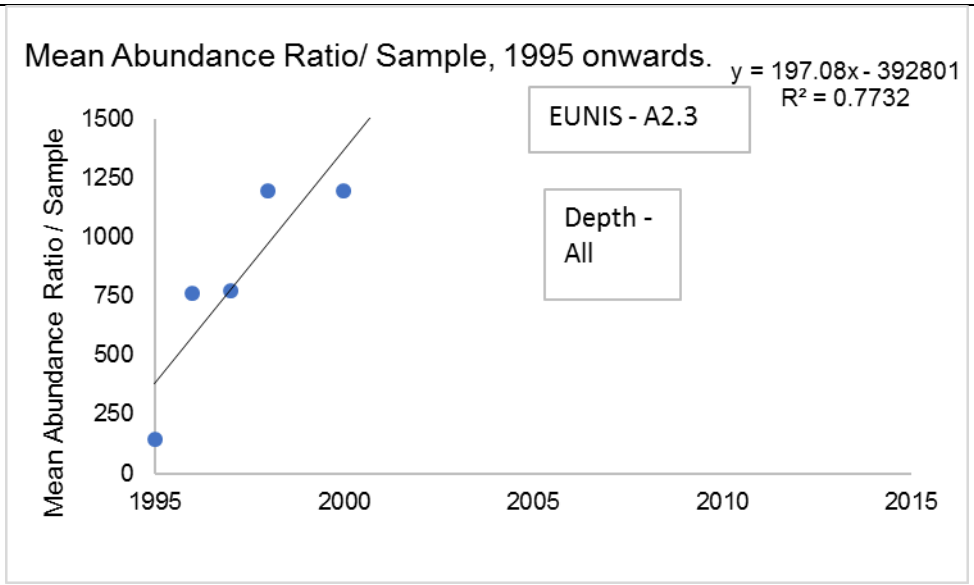

Mean Abundance Ratio/ Sample, 1995 onwards.
EUNIS - All
Depth -
> 10 m
y = -1.6587x + 3344
R² = 0.6839
Mean Abundance Ratio / Sample
100
80
60
40
20
0
1995
2000
2005
2010
2015

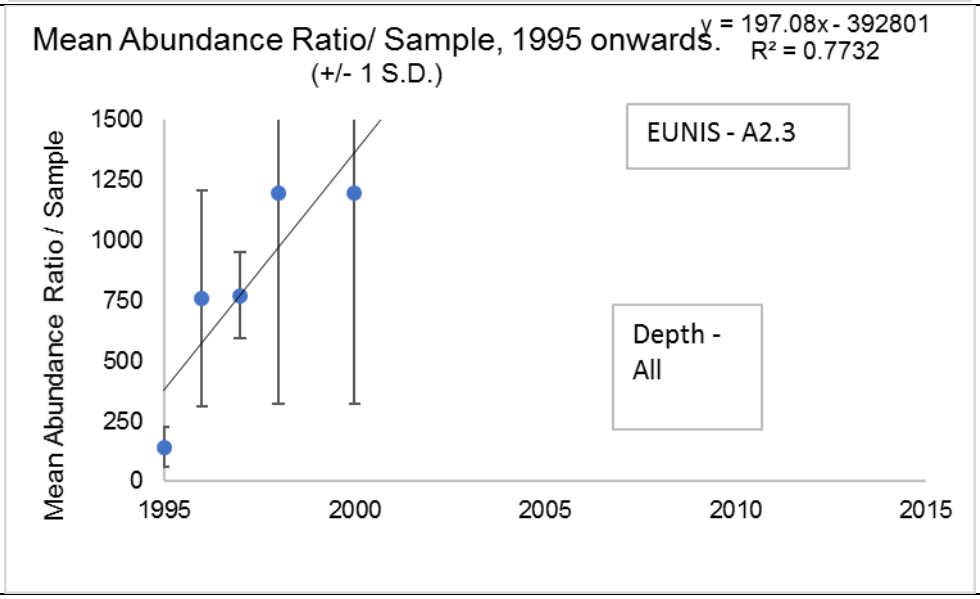

Mean Abundance Ratio/ Sample, 1995 onwards.
(+/- 1 S.D.)
EUNIS - All
y = -1.6587x + 3344
R² = 0.6839
Depth -
> 10 m
Mean Abundance Ratio / Sample
100
80
60
40
20
0
1995
2000
2005
2010
2015

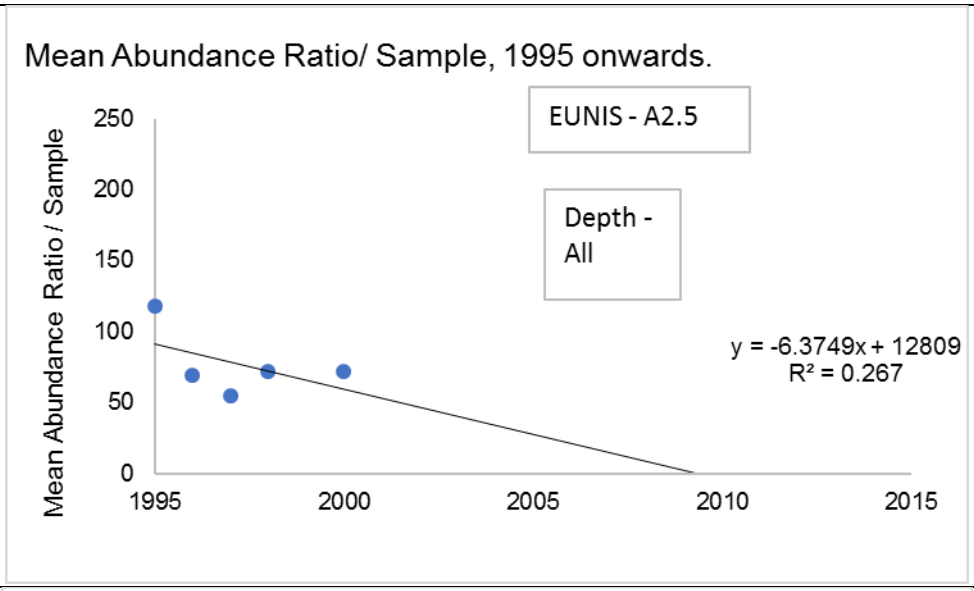
Tables of abundance ratio across years by EUNIS code for all depth ranges combined:

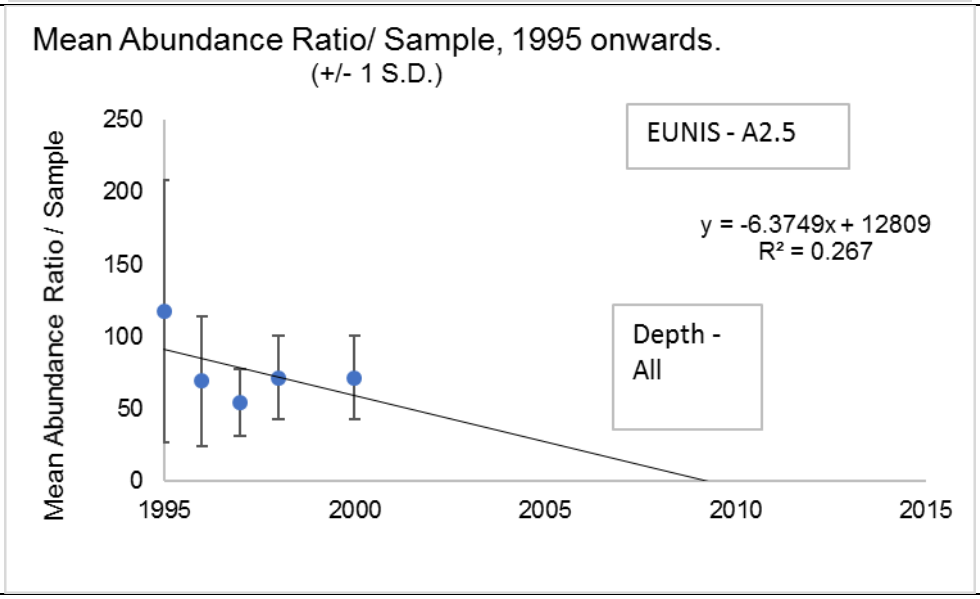


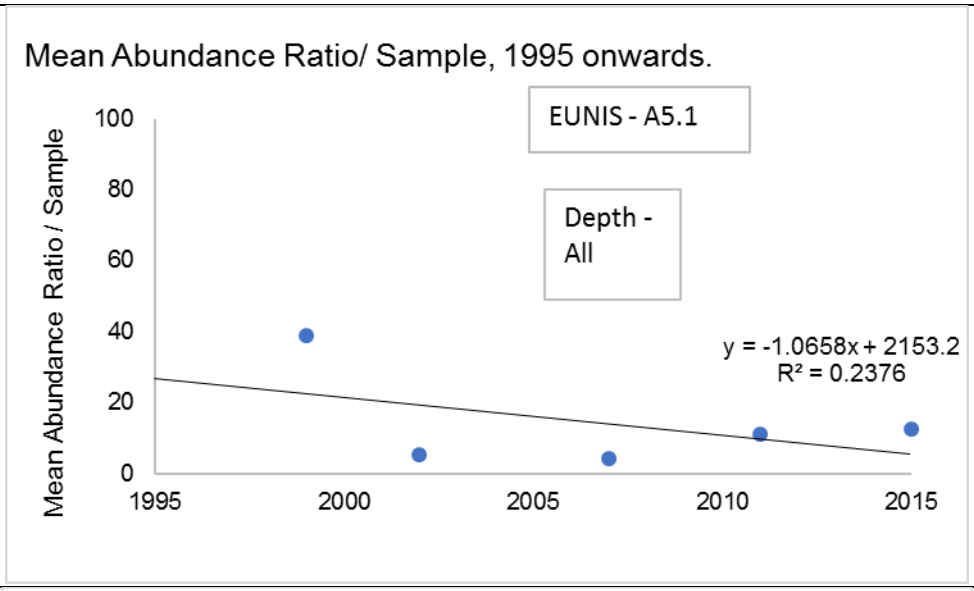


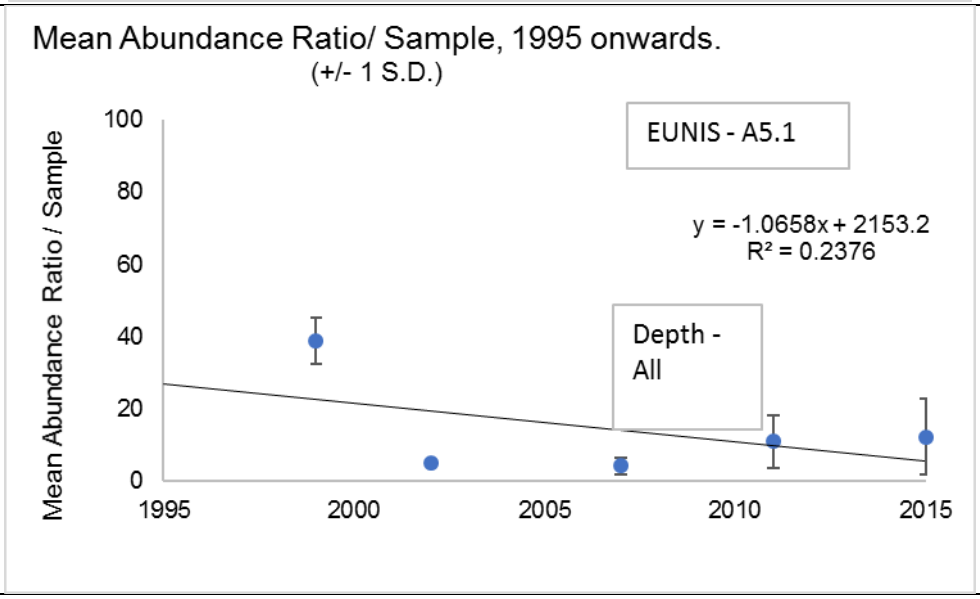

Mean Abundance Ratio/ Sample, 1995 onwards.
y = 197.08x - 392801
R² = 0.7732
EUNIS - A2.3
Depth - All
Mean Abundance Ratio / Sample
1500
1250
1000
750
500
250
0
1995
2000
2005
2010
2015

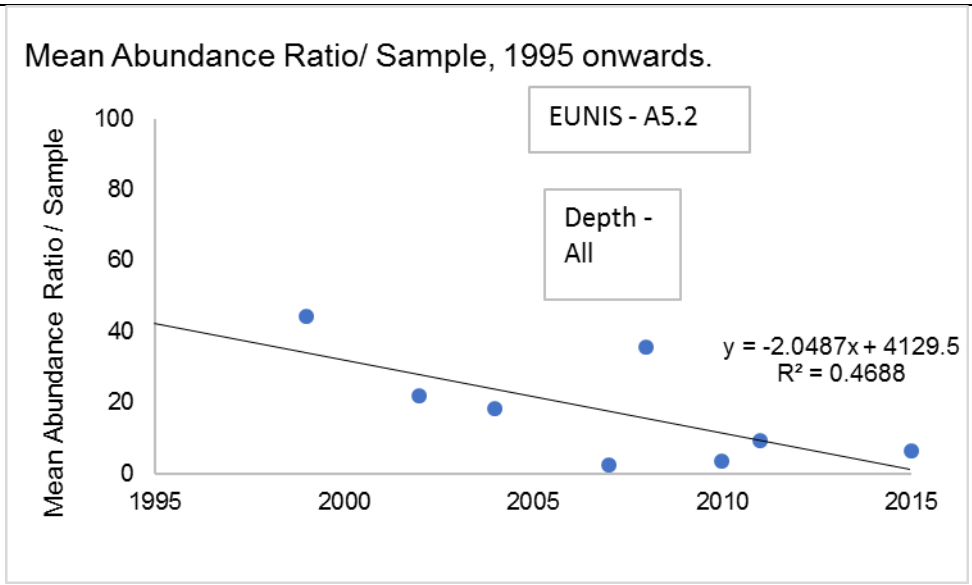

Mean Abundance Ratio/ Sample, 1995 onwards.
(+/- 1 S.D.)
y = 197.08x - 392801
R² = 0.7732
EUNIS - A2.3
Depth - All
Mean Abundance Ratio / Sample
1500
1250
1000
750
500
250
0
1995
2000
2005
2010
2015

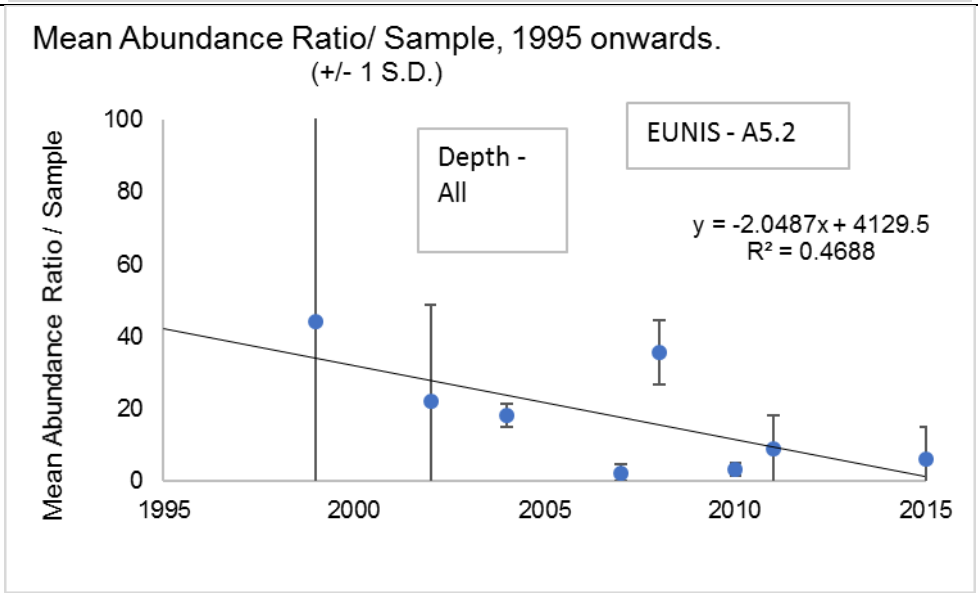

Mean Abundance Ratio/ Sample, 1995 onwards.
EUNIS - A2.5
Depth - All
y = -6.3749x + 12809
R² = 0.267
Mean Abundance Ratio / Sample
250
200
150
100
50
0
1995
2000
2005
2010
2015

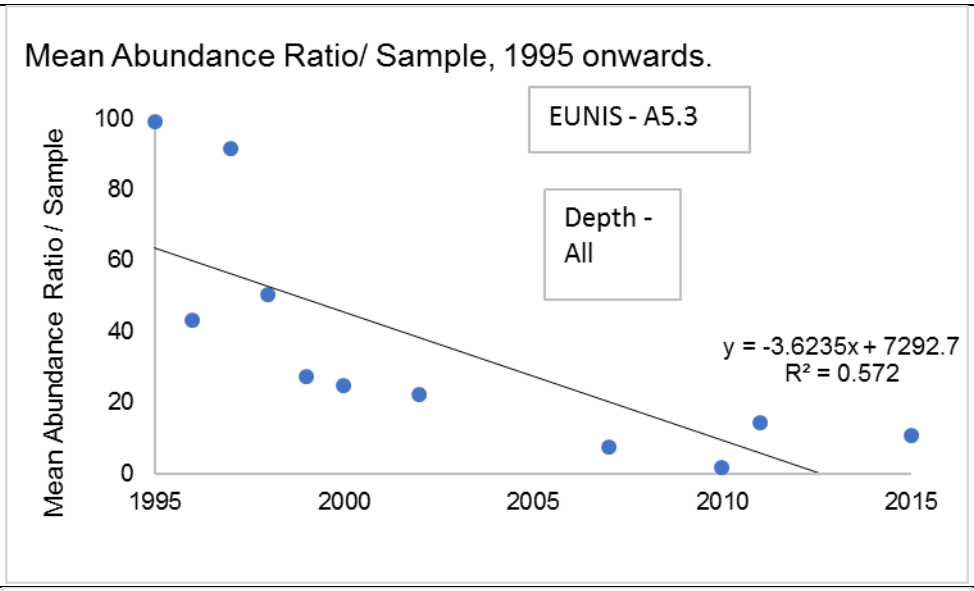

Mean Abundance Ratio/ Sample, 1995 onwards.
(+/- 1 S.D.)
EUNIS - A2.5
y = -6.3749x + 12809
R² = 0.267
Depth - All
Mean Abundance Ratio / Sample
250
200
150
100
50
0
1995
2000
2005
2010
2015

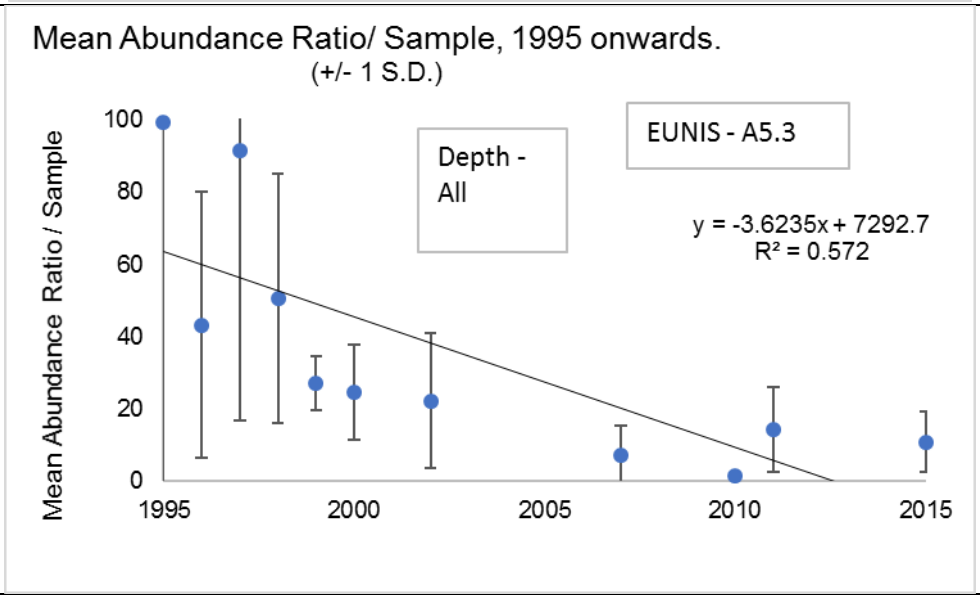

Mean Abundance Ratio/ Sample, 1995 onwards.
EUNIS - A5.1
Depth - All
y = -1.0658x + 2153.2
R² = 0.2376
Mean Abundance Ratio / Sample
100
80
60
40
20
0
1995
2000
2005
2010
2015

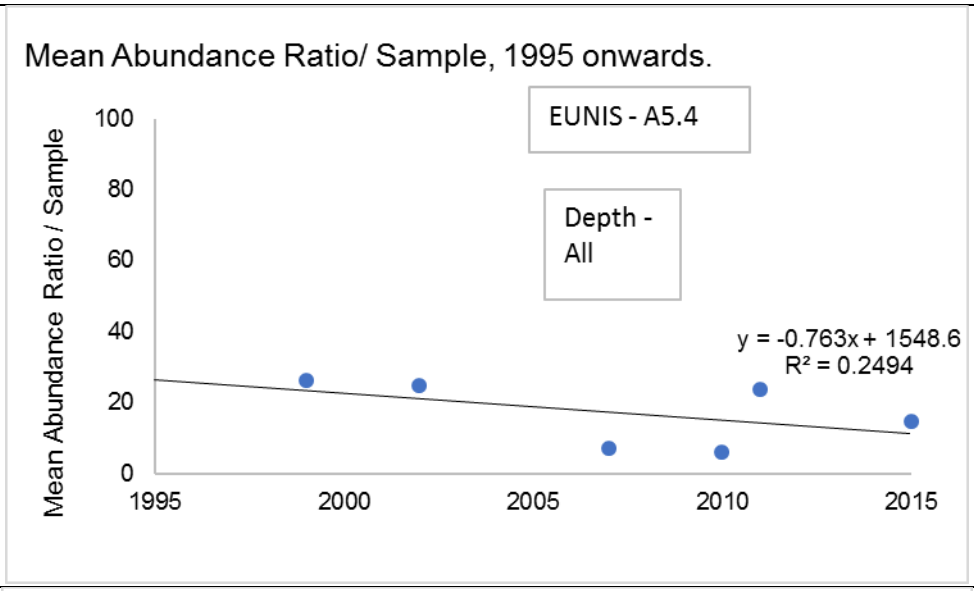

Mean Abundance Ratio/ Sample, 1995 onwards.
(+/- 1 S.D.)
EUNIS - A5.1
y = -1.0658x + 2153.2
R² = 0.2376
Depth - All
Mean Abundance Ratio / Sample
100
80
60
40
20
0
1995
2000
2005
2010
2015

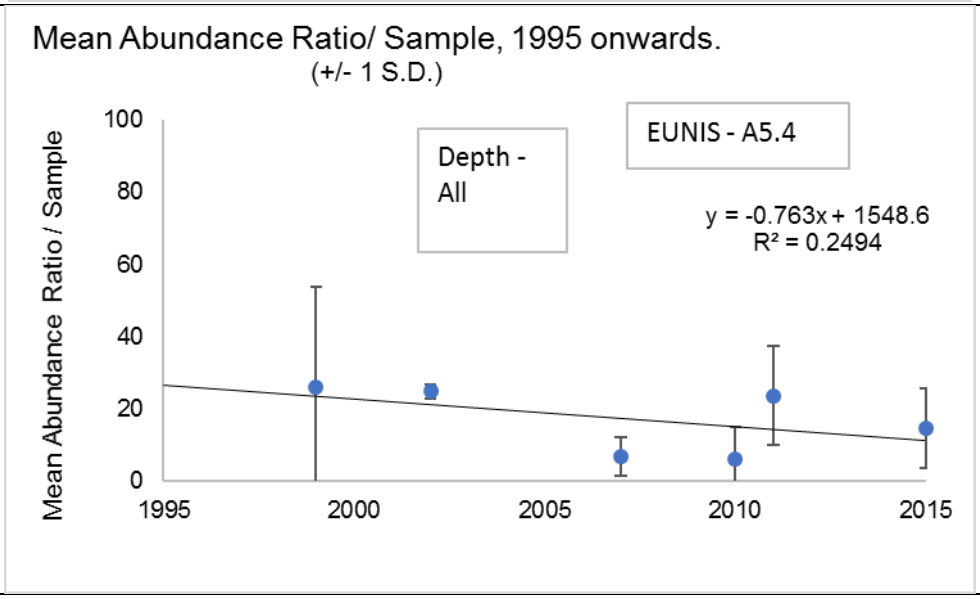

Mean Abundance Ratio/ Sample, 1995 onwards.
EUNIS - A5.2
Depth - All
y = -2.0487x + 4129.5
R² = 0.4688
Mean Abundance Ratio / Sample
100
80
60
40
20
0
1995
2000
2005
2010
2015

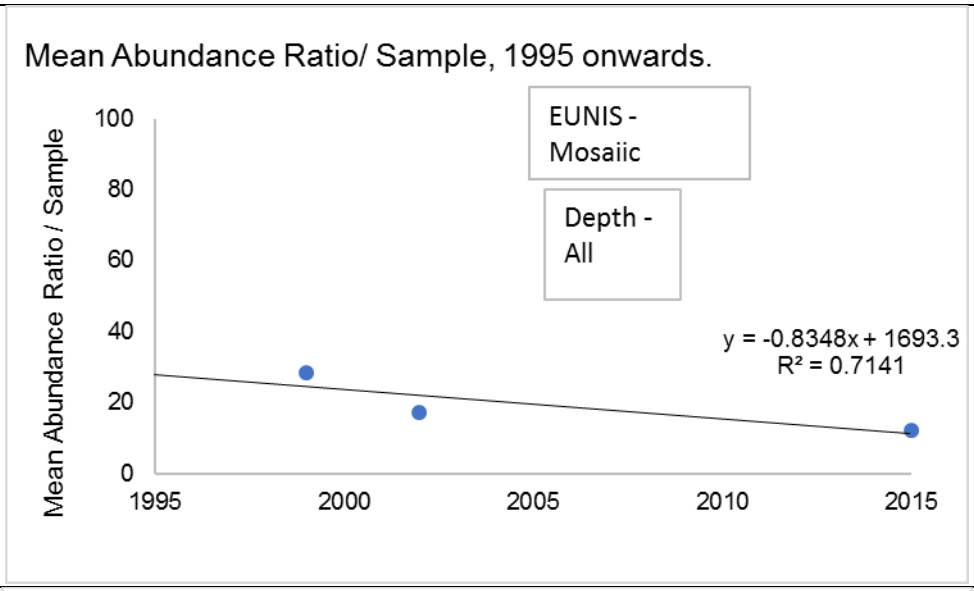

Mean Abundance Ratio/ Sample, 1995 onwards.
(+/- 1 S.D.)
EUNIS - A5.2
Depth - All
y = -2.0487x + 4129.5
R² = 0.4688
Mean Abundance Ratio / Sample
100
80
60
40
20
0
1995
2000
2005
2010
2015

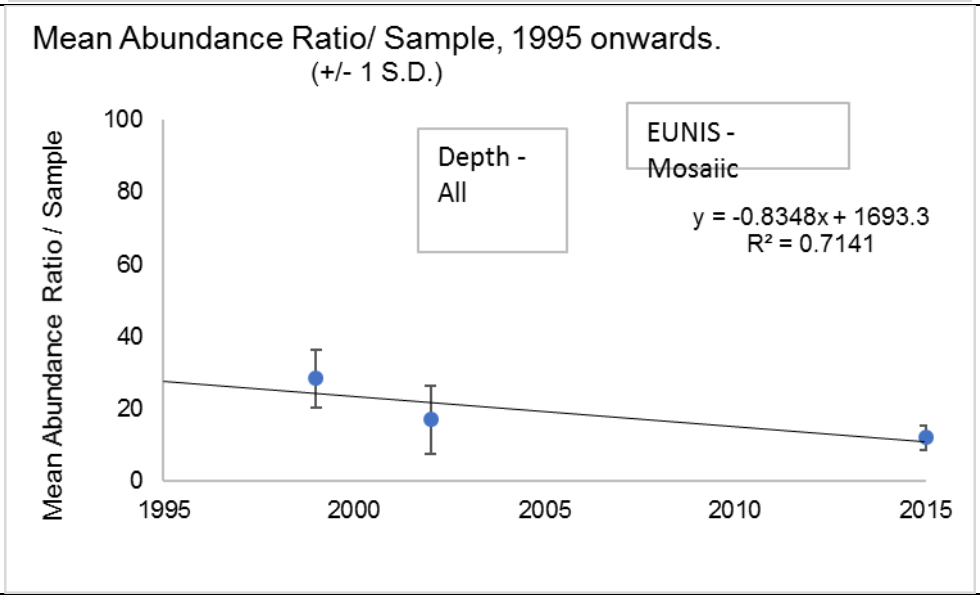

Mean Abundance Ratio/ Sample, 1995 onwards.
EUNIS - A5.3
Depth - All
y = -3.6235x + 7292.7
R² = 0.572
Mean Abundance Ratio / Sample
100
80
60
40
20
0
1995
2000
2005
2010
2015

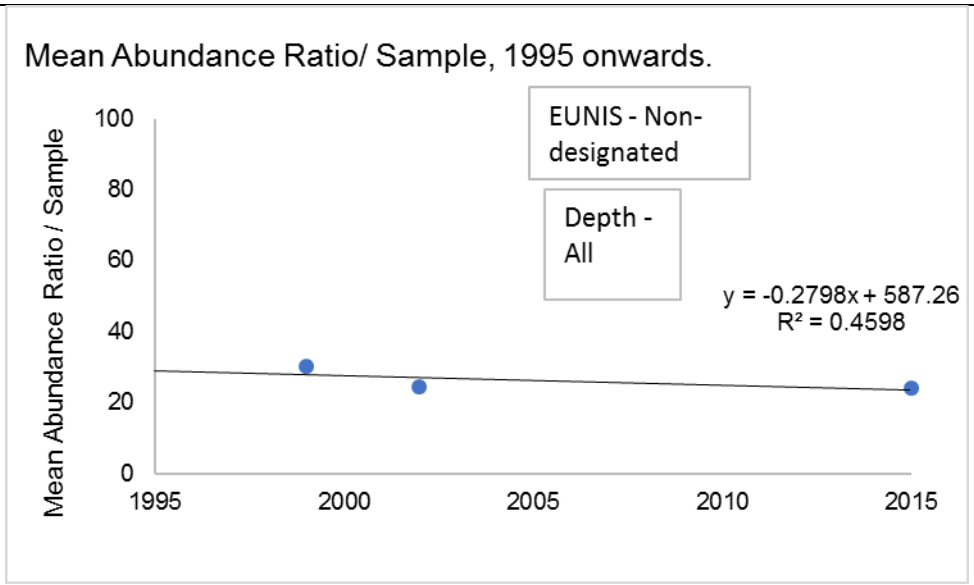

Mean Abundance Ratio/ Sample, 1995 onwards.
(+/- 1 S.D.)
EUNIS - A5.3
Depth - All
y = -3.6235x + 7292.7
R² = 0.572
Mean Abundance Ratio / Sample
100
80
60
40
20
0
1995
2000
2005
2010
2015

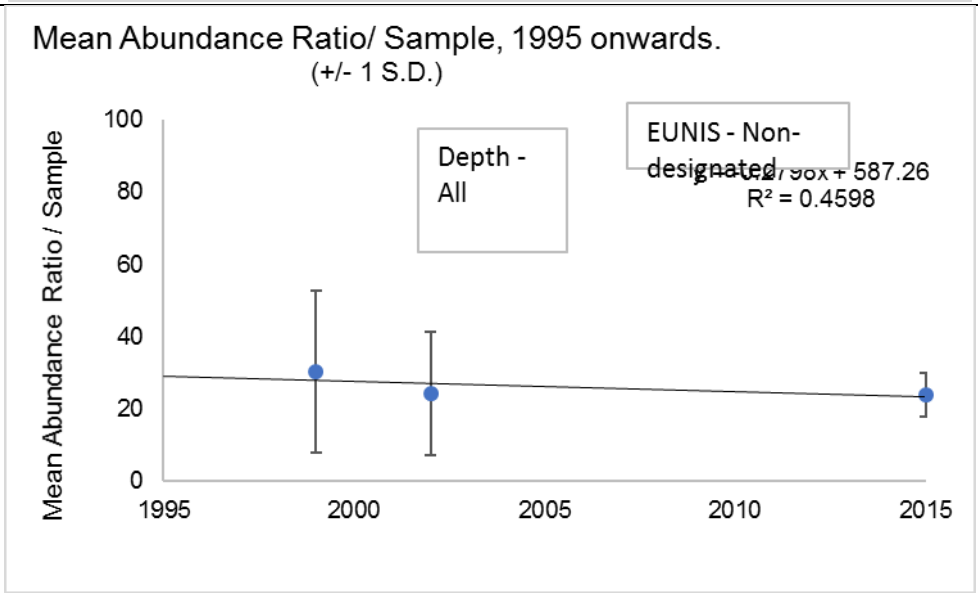

Mean Abundance Ratio/ Sample, 1995 onwards.
EUNIS - A5.4
Depth - All
y = -0.763x + 1548.6
R² = 0.2494
Mean Abundance Ratio / Sample
100
80
60
40
20
0
1995
2000
2005
2010
2015


Mean Abundance Ratio/ Sample, 1995 onwards.
(+/- 1 S.D.)
EUNIS - A5.4
Depth - All
y = -0.763x + 1548.6
R² = 0.2494
Mean Abundance Ratio / Sample
100
80
60
40
20
0
1995
2000
2005
2010
2015


Mean Abundance Ratio/ Sample, 1995 onwards.
EUNIS - Mosaiic
Depth - All
y = -0.8348x + 1693.3
R² = 0.7141
Mean Abundance Ratio / Sample
100
80
60
40
20
0
1995
2000
2005
2010
2015


Mean Abundance Ratio/ Sample, 1995 onwards.
(+/- 1 S.D.)
Depth - All
EUNIS - Mosaiic
y = -0.8348x + 1693.3
R² = 0.7141
Mean Abundance Ratio / Sample
100
80
60
40
20
0
1995
2000
2005
2010
2015


Mean Abundance Ratio/ Sample, 1995 onwards.
EUNIS - Non-designated
Depth - All
y = -0.2798x + 587.26
R² = 0.4598
Mean Abundance Ratio / Sample
100
80
60
40
20
0
1995
2000
2005
2010
2015


Mean Abundance Ratio/ Sample, 1995 onwards.
(+/- 1 S.D.)
Depth - All
EUNIS - Non-designated
R² = 0.4598
Mean Abundance Ratio / Sample
100
80
60
40
20
0
1995
2000
2005
2010
2015